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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,945	08/13/2004	Yi Qu	FMC 1793 PUS / 81101459	4944
28395	7590	08/01/2006	EXAMINER	
BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			BINDA, GREGORY JOHN	
			ART UNIT	PAPER NUMBER
			3679	

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/710,945

Applicant(s)

QU ET AL.

Examiner

Greg Binda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/13/04; 10/13/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

*Election/Restrictions*

1. Applicant's election without traverse of a collapsible shaft (Group I) in the reply filed on June 21, 2006 is acknowledged.
2. Claims 11-16 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on June 21, 2006.

*Drawings*

3. The drawings are objected to because they fail to show the limitations of claims 17-20. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Specification*

4. The disclosure is objected to because:
  - a. In paragraph 0023 the term “tapered sides 32 and 24” should be changed to “tapered sides 32 and 34”.
  - b. An unidentified acronym, FEA, appears in paragraph 0031.
5. The detailed description is objected to as failing to provide proper antecedent basis for the limitation, “two segments,” in claim 1.

*Claim Rejections - 35 USC § 112*

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
7. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 8 recites, “the Ld of the depressed portion is capable of being varied”. However, the specification teaches that the

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collapsible shaft used for torque transmission which indicates the shaft is rigid. As such, there is no teaching of the depressed portion 30 of the shaft 18 having anything other than a fixed length.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 recites the limitation "the cylindrical surface". There is insufficient antecedent basis for this limitation in the claim.

*Claim Rejections - 35 USC § 102*

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Weiner, US 3,730,286. Fig. 1 shows a collapsible shaft comprising: a unitary tube 13 having an outer portion and a depressed portion 17 dividing the outer portion into two segments, the outer portion having

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an exterior radius, the depressed portion having a depressed exterior radius that is less than the exterior radius of the outer portion.

12. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Trommer et al, US 5,566,777. Fig. 1 shows a collapsible shaft comprising: a unitary tube 1 having an outer portion and a depressed portion 4 dividing the outer portion into two segments 2 & 3, the outer portion having an exterior radius, the depressed portion having a depressed exterior radius that is less than the exterior radius of the outer portion.

13. Claims 1-10, 17, 18 & 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchikawa et al, US 6,328,656. Fig. 3 shows a collapsible shaft 10 comprising: a unitary tube 11 having an outer portion and a number of depressed portions 18 & 19 longitudinally centered about different longitudinal locations along the length of the tube, thereby dividing the outer portion into a number of segments 14-16 defined as the number of depressed sections plus one, each segment having an exterior radius, the depressed portions each having a depressed exterior radius that is less than the exterior radius of each segment of the outer portion.

14. Claims 1-10 & 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al, US 5,946,977. Fig. 10 shows a collapsible shaft 100 comprising all the limitations of claims.

15. Claims 1-10 & 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Okubo, US 6,022,047. Fig. 1 shows a collapsible shaft 21 comprising all the limitations of claims.

16. Claims 1-10 & 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Uggla, FR 616,929. Fig. 3 shows a collapsible shaft comprising all the limitations of claims.

17. Claims 1-3, 9, 10 & 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Larsen et al, US 2,848,882. Fig. 6 shows a collapsible shaft 14 comprising all the limitations of claims.

18. Claims 1-3, 9, 10 & 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sundt, US 3,232,076. Fig. 1 shows a collapsible shaft 17 comprising all the limitations of claims.

19. Claims 1-10 & 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Lutz, US 2003/0173765. Fig. 14 shows a collapsible shaft comprising all the limitations of claims.

### *Conclusion*

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (571) 272-7077. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Greg Binda".

Greg Binda  
Primary Examiner  
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